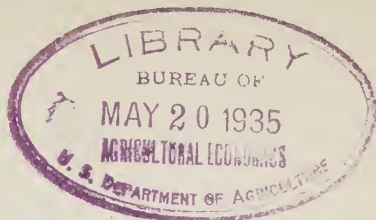


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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
SOIL EROSION SERVICE

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SOIL EROSION SERVICE

UNITED STATES DEPARTMENT OF THE INTERIOR

ELM CREEK WATERSHED--CENTRAL TEXAS

NEWS LETTER-----NO. 5.

TEMPLE, TEXAS.

OCTOBER, 1934.

IN MEMORIAM

Robert F. Gray

ECW CAMP ENROLLEE

ACCIDENTALLY KILLED

OCTOBER 17, 1934.

HE WILL BE SADLY MISSED BY HIS

FELLOW WORKERS AND FRIENDS.

## STRIP CROPPING AND FIELD STRIPPING

The two terms, "Strip Cropping" and "Field Stripping" are used in connection with certain erosion control practices. Strip cropping consists of planting or sowing close growing crops in strips on the contours at regular intervals in the field, alternated with strips of row crops. This method was discussed in detail in the August news letter (No. 3).

Field stripping means the same thing except that we usually think of wider strips when this term is used.

The Soil Erosion Service recommends and urges that all terraces be sowed to a close planted crop the first year. New terraces will settle the first year from 4 to 10 inches, and should the water run over the terraces there would not be as much damage done if it is sowed instead of row planted.

Sowing the terraces is one form of strip cropping but will not give as good results from an erosion control standpoint unless the strip includes about half of the terrace interval both above and below the terrace. If every other terrace is stripped this way, erosion losses would be almost entirely checked. This would mean about 50% of the field in row crops and 50% in sowed crops. If every third terrace is sowed, including one half of the terrace interval, both above and below the terrace, about 70% of the crop will be planted in row crops and about 30% in sowed crops. Point rows

may be eliminated if one will run a line half way between the terrace intervals and parallel to the terraces above and below the sowed terrace.

### Seed Furnished To Cooperators

All farmers who cooperate to the extent of sowing the terraces the first year will be furnished with sudan seed to sow on the terraces. The farmers who "strip crop" or "field strip" will be furnished enough Hairy Vetch, Austrian Winter Peas, or Hubam to sow two to five acres. The farmer will be expected to save the seed from this crop so that he will have enough to plant a larger acreage next year. The farmer will be expected to return to the Soil Erosion Service the amount of seed originally furnished him.

### PROTECTING TERRACES AGAINST WEAK PLACES

When we have completed the grader work on a terrace we have not built a terrace, but only started one. The building of the terrace ridge across the low places is even more important than the grader work. The low places are the vital points; the weak link that will break the strongest chain.

If fills across the low places are not built high enough to make the water flow out the terrace channel, the terraces will not work, the fill will wash out and all the work done on it will be lost. The washing out of this fill will not be the worst that will happen. All terraces below the break will also be broken by the water and a lot of work and time

may be lost on account of one incomplected fill.

Always build the fills on the top terrace first and complete them before going to the second one down the hill. Doing this will always protect the work below and there will be very little chance of the terraces washing out if the terrace ridge and fills are built high enough and are maintained properly.

#### FARM POWER TRENDS AND THE PROBABLE EFFECT ON AGRICULTURE

The Soil Erosion Service has recently begun an economic study of the farming practices over the entire Elm Creek Watershed, obtaining records of the actual conditions on these farms during the 1933 crop season.

In these surveys one of the records being taken is of the number of horses and mules on each farm, together with the ages of the animals, as nearly as can be determined. On 140 farms already surveyed, there were 629 work animals kept during the 1933 season, - an average of a little more than four per farm. The average age of all animals kept was  $13\frac{1}{2}$  years with only 27 of the total number being 6 years old or less. There were 33 of the 629 that were 25 years old or older.

According to Census reports there was a decrease of 35,146 horses and mules on Texas farms during the years 1920 to 1930, the number of horses being greatly reduced while the number of mules had increased somewhat.

The combined decrease was 5%, there being 95 work animals on farms of the state in 1930 where 100 were present 10 years earlier. Since the work stock now kept on Texas farms are much older than was the case in 1920, it is to be expected that there has been a marked decrease in the horse and mule population of the U.S. Tractors and trucks have replaced a great number of work animals as shown by the increase of these motor power units kept on farms.

#### Number of Tractors Increasing

The total work stock on farms of the country in 1920 was 25,748,000 as compared to 17,231,000 in 1933, a decrease of about one third. In several of the leading agricultural states there has been an increase of 200 percent in the number of tractors on farms in the last 10 years - there being 9 tractors in 1930 where only 3 were used in 1920. There has also been an increase in the number of trucks and automobile trailers on farms, but at a less rapid rate.

#### Cutting Cost of Crop Production

The bringing into production of the extensive High Plains area of Texas during recent years has brought a great increase in the number of tractor farms in the state. While some displacement of work stock came about as a result of the breaking of these broad level areas, the more significant result probably has been on the matter of lowering production costs due to the ideal combination of soil and climate, requiring but small expense for cultivation of crops. To meet the low cost competition of West Texas and the problem



of prevailing lower prices farmers in other parts of the state have been searching desperately for some means of lowering production costs of their chief cash crop - cotton.

Tractor manufacturers have capitalized upon the farmer's eagerness to lower production costs and have used every possible means to convince them of the economy of tractor power over that of farm mules. It is possible that many cotton producers have not had the opportunity to do their own thinking in the matter of making choice of the best course to take.

#### Farmers Should Raise More Colts

The shift to more power farming has been accelerated more recently by the rise in price of farm mules, as a result of the decreased supply of young animals. Texas farmers do not raise enough colts to replace the old and worn-out stock, and hence are dependent upon outside sources for these animals. This fact is emphasized in the finding of only 2 colts (under 2 years of age) on the 140 farms surveyed in the watershed. The increased price, as already mentioned, results largely from the more rapid decrease of supply of farm mules in relation to demand. In the 5 states from which Texas imports mules there has been a decrease of 27 horses and mules in 100 in the last two years 1932 to 1934, (states of Oklahoma, Kansas, Missouri, Iowa and Arkansas).

Other factors influencing farmers to shift from animals to tractors is the development of the more economical general purpose tractor. It is likely that further improvement on special types of

tractors will come about within the next few years.

The economic soundness of the policy of shifting to more tractors on the smaller farms is satisfied in the minds of some farmers under the present conditions, but there lurks a probable far-reaching danger of even greater over-production of feed crops as soon as the temporary shortage due to drought conditions is overcome. The sections of the United States producing grain and hay crops are most likely to feel the ill effects of the substitution much more acutely than has already been felt.

#### Less Feed Troughs - More Surplus

The decrease of  $8\frac{1}{2}$  million work animals on farms in the U.S. in 1933 has already thrown into the channels of trade corn, oats and hay from approximately 40 million acres of land. When the "drought" for feed shortage is past and the sections growing these feedstuffs are allowed to plant heavier acreages there is most likely to result a more abundant supply of feeds than the country has ever seen. Farmers depending upon these crops as the source of cash income are certain to feel the financial effects of millions of discontinued feed troughs and hay racks because of the change in appetite for petroleum products.

The resulting over-supply of feeds is likely to emphasize the need for withdrawing millions of acres of good farm lands from production or the inducing of the consumption of products from these fields for entirely new uses - such as necessity and science may be able to work out.

## EROSION SURVEY RESUMED

The Soil Erosion Service has resumed the detail erosion survey of the watershed. This part of the program was discontinued temporarily to make an erosion reconnaissance of the State of Texas. This reconnaissance has been finished and though necessarily general in nature gives a very comprehensive picture of land use and extent of erosion in the entire state. It should be remembered that the purpose of the erosion survey of the Elm Creek Watershed is to make an accurate map of the watershed showing soil type, present land use, slope of land and degree of erosion. This information aids the erosion specialist and agronomist in determining which lands, because of excessive slope or erosion, should be put in permanent pasture, which lands should be terraced or strip cropped, and which lands should be planted entirely to thick growing crops.

It is evident from the area already mapped that much of the land now being cultivated in the watershed is too badly eroded to profitably produce such crops as corn and cotton. If erosion is controlled and organic matter is added to the soil, many of these fields will, in a few years, again become valuable agricultural land.

A percentage of the fields in the watershed, however, are so badly eroded (all top soil gone) that it is almost impossible to improve them to such an extent that cultivation would again be profitable. Many, many years would be required to make any great improvement in the fertility or physical condition of these lands. These should be converted into permanent pastures, and it may

be necessary to use some fertilizer in order to obtain a satisfactory stand.

The condition of such land should be a lesson to all farmers who have sloping fields, and should be an added inducement for them to terrace while their lands are still worth saving. The better the land, the greater will be the benefit from terraces.

PROGRESS REPORT AS OF SEPTEMBER 30, 1934.

1. Soil Erosion control practices have either been completed or are in process of completion on 312 farms.
2. 1,297,770 feet of terrace lines were run during the month of September. Total feet of lines run up to September 30, 5,095,944.
3. 523,071 feet of terraces were constructed during the month of September. Total feet of terraces constructed up to September 30, 1,903,962.
4. 274 dams or spillways were constructed for gully control and terrace outlet protection during the month of September. 1,386 dams of all types have been built to September 30. 450 E.C.W. men from the Temple Camp S.E.S. T-1 and the Troy Camp, S.E.S. T-2 are used in the construction of these dams.
5. Farmers have agreed to contour furrow 936 acres of pasture land, and 391 acres have actually been contour furrowed.
6. 390 acres have been retired from cultivation and converted into permanent pasture.

7. 65 fresnces and 140 graders are now in use in the field. Nine large type road graders from Bell, Milam and Falls counties are also being used.
8. 60 more graders and 25 more fresnces have been ordered, which will make a total of 200 graders and 90 fresnces for use in the field when they arrive.

FEDERAL LAND BANK LAUDS WORK OF SOIL  
EROSION SERVICE BY ADOPTING THE  
FOLLOWING RESOLUTION.

R E S O L U T I O N

WHEREAS, the Federal Land Bank of Houston has, for years, recognized the importance and need of soil and water conservation, and the benefits of terracing and drainage structures on farms securing Federal Land Bank loans, realizing that such conservation work promotes the welfare of its borrowers and farm communities, maintains the security of Federal Land Bank loans and adds greatly to the stability and permanency of agriculture in Texas: and,

WHEREAS, the Federal Land Bank has cooperated in every movement looking to the success and extension of this important work, and has followed the work of each Federal and State conservation project with intense interest, anticipating an ultimate program of widely extended permanent conservation work: and,

WHEREAS, the United States Department of the Interior Soil Erosion Service has established erosion demonstration areas in Texas, on the watersheds of Elm Creek, in Bell and Milam Counties,

and Duck Creek, in Smith County; has worked out a complete plan of demonstration, and has promoted a cooperative arrangement with landowners under which terracing and water control structures have been built; and the farm owners have agreed to, and have conformed their farming operations to suitable uses, according to the topography of the land, the effect of which has already shown the value and benefits of conservation work and adaptability of land to uses suitable to its topography; and such experiments have occasioned widespread educational interest, and demonstrated the benefits of conservation and the value of proper soil uses; and,

WHEREAS, there is now being established a wind erosion demonstration project for the North Plains area of Texas, to devise practical means of protecting the soil, which has been badly affected during the past two years:

NOW, THEREFORE, BE IT RESOLVED: That the Board of Directors of the Federal Land Bank of Houston, in meeting assembled, hereby commend as highly constructive, and destined to be of great permanent value to our agricultural welfare, the work of the Soil Erosion Service of the United States Department of the Interior, in connection with the Elm Creek, Duck Creek and North Plains Soil Erosion areas. And we further commend the use of CCC, CWA, PWA and FERA workers in the employment of projects so highly beneficial and essential to the public good."

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Here is a letter we received a few days ago. It reflects the widespread influence of our project:

San Antonio, Texas.  
October 29, 1934.

Doctor Geib, Director CCC Soil Erosion Service,  
Temple, Texas.

Dear Dr. Geib:

I have traveled over much of the U.S. in the last three years and nowhere have I seen such splendid work as has been done by the CCC and your engineers around Temple.

A number of farmers in Gonzales County are doing terracing but competent engineering is a problem; my brother, M.K. Towns, and Mr. J.R. Tinsley would like to have several hundred acres terraced.

What would it cost Mr. Tinsley and my brother to have an engineer come and lay out this work for them? They want to be sure that they are doing the work under an experienced engineer and for this reason, I am writing you.

Yours very truly,

/s/ John G.K. Towns,  
Nixon, Texas.

These farmers have the determination that wins! They are going to get the job done whether they have Government help or not.

A TRIBUTE TO THE C.C.C. FROM THE "TROJAN"  
(Newspaper of the Troy Camp)

"WHY IT IS CALLED THE TROJAN"

By W.J. McNahan

The name of the village that adjoins our camp is suggestive of the name "TROJAN", which in ancient times designated a citizen of Troy. How this little Central Texas town got it's name, I do not know, but it is the symbol of bravery and dogged stubbornness.

No better name, no matter where may be, could be more symbolic of the spirit of the Veterans of the CCC. Their membership in this organization is their flag of No Surrender and No Quarter to the force of circumstance that makes most men want to give up and follow the lines of least resistance.

The history of ancient Troy is one long tale of strife and bloodshed to maintain their niche in the roster of nations. The Veterans have much in common with the fighting spirit of these people and their desire to remain part of the commercial and economical world in spite of the more powerful forces that set themselves against them. Let them take heart and fight the fight of Trojans and soldiers for those they love, and those who love them."

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PRECIPITATION IN ELM CREEK WATERSHED

Following is a record of the rainfall from May to September 30th, at stations in the watershed:

STATION	MAY	JUNE	JULY	AUG	SEPT
#11 Stringtown	x	0	.80	0	0
#12 nr. Heiden.	x	0	.85	.20	.90
#13 N. of Oscar	x	0	.87	.90	0
#14 Doubleheader	-----No Record Sent-----				
#15 W.E. of Tem.	x	0	0	.23	0
#16 nr. Troy	.15	.59	.24	.35	.35
#17 N.W. Troy	.30	0	0	0	.90
#18 E. Moody	1.80	0	.45	0	0
#19 Shiloh	x	.58	.32	.55	.35
#20 Bottoms	x	.07	.14	.33	.58
#21 Oenaville	x	0	.89	.36	0
#22 Theo Ch.	-----No Records Sent-----				
#23 Bean Hill	x	x	.45	.28	0
#24 Seaton	x	x	1.08	.50	.67
#25 Airville	x	x	1.88	.73	1.23
#26 Cyclone	.11	0	1.33	0	2.12
#27 S.W. Meeks	x	0	.40	.16	.45

RECORDERS

#1	E. Temple	x	0	.90	.22	.48
#2	nr. Troy	x	.02	.24	.39	.24
#3	nr. Zabeik.	x	0	1.73	.45	1.03

x--Station not installed; no record.



Beneath the placid surface  
of Rogers Lake lies an ever  
increasing mass of the most  
fertile topsoil of the neigh-  
borhood. Each year an aver-  
age of 19 tons of soil is  
washed from every acre that  
drains into this lake.

TERRACING SONG  
(Tune of "Casey Jones")  
With Apologies to S.L. Reese

Come all you farmers and lend us your ears;  
Learn how to save your farm for future years,  
If you don't save the soil, you'll be sorry  
some day,  
For as sure as preachin' it will all wash away.

Chorus:

Terraced land grows more corn and cotton,  
Terraced land grows more oats and hay,  
Terraced land saves the soil from washing,  
So you'll have a farm to give the boys some day.

You may talk about the weevil, the worm and  
the flea,  
And the damage they do, but you listen to me--  
They may eat up the crops, but they can't do  
the harm

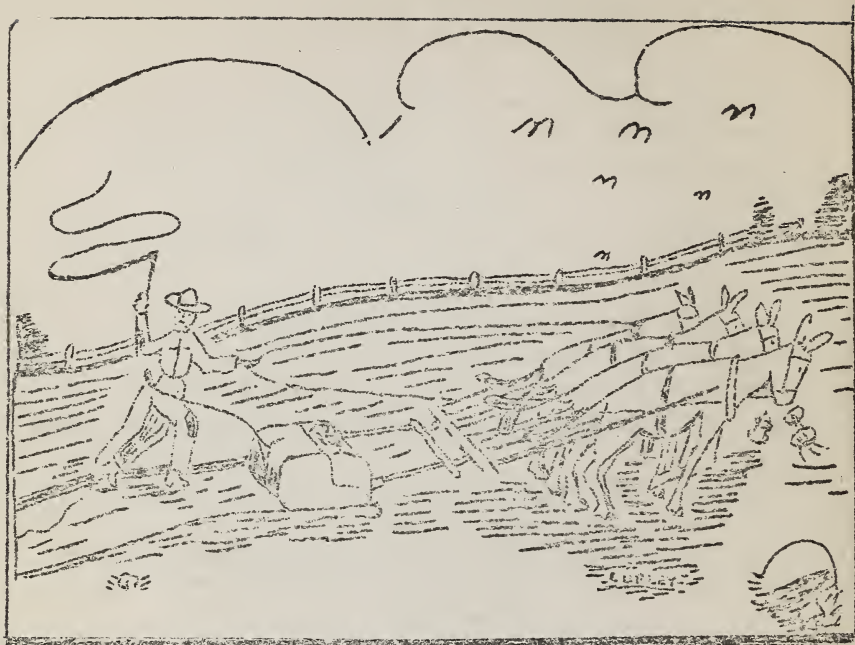
Of each successive shower that runs off your farm.

Chorus:

So hitch up your mules and get down to work,  
There's not a man who can afford to shirk,  
The Soil Erosion Service will help you all it can,  
And you'll not be sorry if you follow their plan.

Chorus:

Now come on, Mr. Farmer, and that contract sign,  
Get your name on the dotted line,  
You know your land is washing down the hill,  
And you can stop it if you only will.



If the average amount of soil lost each year by erosion from an average 120 acre farm were deposited at the boundary of the farm, the replacement of the lost soil on the farm by one man with four mules and a four foot fresno would require:

The moving of 3,000 tons of soil.

15,000 round trips with a fresno.

Driving the team 7,500 miles.

Working 3,750 hours, or 469 eight hour days.

In other words, more soil washes off this average farm, and will continue to wash until there is no more soil, than one man can possibly replace by working all available hours with the equipment at his command.

Note: The figures above are conservative. They are based on actual measurements of soil losses from experimental fields.